

GRACE HYDROELECTRIC FACILITY (PWS 6150021) SOURCE WATER ASSESSMENT FINAL REPORT

June 28, 2001



State of Idaho Department of Environmental Quality

Disclaimer: This publication has been developed as part of an informational service for the source water assessments of public water systems in Idaho and is based on the data available at the time and the professional judgement of the staff. Although reasonable efforts have been made to present accurate information, no guarantees, including expressed or implied warranties of any kind, are made with respect to this publication by the State of Idaho or any of its agencies, employees, or agents, who also assume no legal responsibility for the accuracy of presentations, comments, or other information in this publication. The assessment is subject to modification if new data is produced.

Under the Federal Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. The Idaho Department of Environmental Quality (DEQ) is completing the assessments for all Idaho public drinking water systems. The assessment for the Grace Hydroelectric Facility drinking water source is based on a land use inventory within a 1,000 foot radius of your drinking water source, sensitivity factors associated with the source, and characteristics associated with either your aquifer or watershed in which you live.

This report, *Source Water Assessment for Grace Hydroelectric Facility (PWS # 6150021)* describes the public drinking water system, the associated potential contaminant sources located within a 1,000 foot boundary around the drinking water source, and the susceptibility (risk) that may be associated with any potential contaminants. This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this system. **The results should not be used as an absolute measure of risk and they should not be used to undermine public confidence in the Grace Hydroelectric Facility water system.**

The Grace Hydroelectric Facility drinking water system consists of two springs, Upper Spring and Lower Spring, approximately six miles south of Grace (Figure 1). There exists a third spring referred to as the “Below Dugway Spring,” that is used for emergency purposes only and is not actively being used as a drinking water source. At this time, there appears to be no primary water quality issues associated with the water system, however, there is one potential contaminant source existing within the delineation capture zones for the Upper and Lower Springs (Table 1 and Figure 2). This source is a Superfund Amendment and Reauthorization Act Tier II Facility (SARA) listed under the Community Right to Know Act to identify hazardous materials storage facilities. Possible contaminants associated with this SARA facility are petroleum-related products including diesel and gasoline, mineral oil, and sulfuric acid.

The susceptibility of this public water system to contamination was ranked as high, moderate, or low risk according to the following considerations: physical integrity of the spring intake structures, land use characteristics, and potentially significant contaminant sources. The susceptibility rankings are specific to a particular potential contaminant or category of contaminants. Therefore, a high susceptibility rating relative to one potential contaminant does not mean that the water system is at the same risk for all other potential contaminants. The relative ranking that is derived for this water system is a qualitative, screening-level step that, in many cases, uses generalized assumptions and best professional judgement.

The *Surface Water Treatment Rule*, a primary drinking water regulation, requires that all ground water sources be evaluated to determine if they are ground water under the direct influence of surface water (GWUDI). Ground water that is influenced by surface water may travel a relatively short distance in a brief period through aquifer material with large pores or fractures. Under these circumstances, pathogenic microorganisms may be transported in a viable state to the springs, infiltration gallery, or well intakes. According to the Southeastern District Health

Department, the Grace Hydroelectric Facility bypassed their final GWUDI evaluation and implemented filtration and chlorinating processes for their drinking water sources.

The source construction scores for the Upper and Lower springs were rated moderate. There was insufficient information available relating to the springs' intake structure to properly evaluate source construction. The risk to the water system is considered less if the spring intake is constructed in such a fashion as to prevent the infiltration of unwanted water with the potential to carry contaminants. Other factors included in the susceptibility evaluation are soil drainage and farm chemical applications. Based upon data available for Caribou County, the soil in this area varies from poor to moderate and moderate to well drained with the herbicide usage as high. The soil composition may reduce the downward movement of contaminants, but there is a possibility of agricultural wastewater affecting the water source. Another influence of source contamination is animal grazing. The upper spring is currently not fenced. Animal grazing near the spring may increase the likelihood of contaminants infiltrating your drinking water system. The final susceptibility ranking for the lower spring is low and the upper spring is high for microbial contaminants, and both springs were low for inorganic, volatile, and synthetic organic contaminants (Table 2). A copy of the susceptibility analysis (Table 3) for the Grace Hydroelectric Facility water system along with a map showing any potential contaminant sources (Figure 2) is included with this summary.

Table 1. Grace Hydroelectric Facility Potential Contaminant Inventory for Upper and Lower Springs

Site #	Source Description	Source of Information	Potential Contaminants ¹
1	SARA Site	Database Inventory	VOC, SOC

¹Potential Contaminants: IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

Table 2. Summary of Grace Hydroelectric Facility Susceptibility Evaluation

	Susceptibility Scores ¹								
	Contaminant ² Inventory				Source Construction	Final Susceptibility Ranking			
Spring	IOC	VOC	SOC	Microbials		IOC	VOC	SOC	Microbials
Lower	L	L	L	L	M	L	L	L	L
Upper	L	L	L	L	M	L	L	L	H*

¹Susceptibility Scores: H = High Susceptibility, M = Moderate Susceptibility, L = Low Susceptibility

²IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

H* = Source is automatically scored as high susceptibility due to spring accessibility to animals (spring is unfenced).

This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a “pristine” area or an area with numerous industrial and/or agricultural land uses, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

For the Grace Hydroelectric Facility drinking water system, source water protection activities should focus on implementing practices aimed at keeping the source free of microbial and other contaminants. Although there are no water quality issues at this time, the water system should consider developing a protection strategy. Source water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term. For assistance in developing protection strategies please contact the Pocatello Regional Office of the Idaho Department of Environmental Quality at (208) 236-6160.

POTENTIAL CONTAMINANT INVENTORY LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as ASuperfund, is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of storm water runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (IDEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100-year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with

leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.)

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by IDEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility.

Surface (Spring) Water Final Susceptibility Scoring

0-6 = Low Susceptibility

7-12 = Moderate Susceptibility

13-18 = High Susceptibility

Table 3. Grace Hydroelectric Facility Susceptibility Analysis

Surface Water Susceptibility Report

Public Water System Name :

GRACE HYDROELECTRIC FACILITY
6150021

Well# : LOWER SPRING

06/13/2001 4:42:21 PM

1. System Construction		SCORE				
Intake structure properly constructed	NO	1				
Infiltration gallery or well under the direct influence of Surface Water	YES	2				
Total System Construction Score		1				
2. Potential Contaminant Source / Land Use		IOC Score	VOC Score	SOC Score	Microbial Score	
Predominant land use type (land use or cover)	BASALT FLOW, UNDEVELOPED, OTHER	0	0	0	0	
Farm chemical use high	YES	0	0	2		
Significant contaminant sources *	NO					
Sources of class II or III contaminants or microbials	present within a 1-mile radius and upstream	0	2	2	2	
Agricultural lands within 500 feet	NO	0	0	0	0	
Three or more contaminant sources	NO	0	0	0	0	
Sources of turbidity in the watershed	NO	0	0	0	0	
Total Potential Contaminant Source / Land Use Score		0	2	4	2	
3. Final Susceptibility Source Score		1	3	5	3	
4. Final Source Ranking		Low	Low	Low	Low	

* Special consideration due to significant contaminant sources

The source water has no special susceptibility concerns

1. System Construction

SCORE

Intake structure properly constructed	NO	1
Infiltration gallery or well under the direct influence of Surface Water	YES	2

Total System Construction Score 1

2. Potential Contaminant Source / Land Use

IOC Score VOC Score SOC Score Microbial Score

Predominant land use type (land use or cover)	BASALT FLOW, UNDEVELOPED, OTHER	0	0	0	0
Farm chemical use high	YES	0	0	2	
Significant contaminant sources *	YES	No 100 foot perimeter fence around Upper Spring. Potential animal grazing near spring location.			
Sources of class II or III contaminants or microbials	present within a 1-mile radius and upstream	0	2	2	2
Agricultural lands within 500 feet	NO	0	0	0	0
Three or more contaminant sources	NO	0	0	0	0
Sources of turbidity in the watershed	NO	0	0	0	0

Total Potential Contaminant Source / Land Use Score 0 2 4 2

3. Final Susceptibility Source Score

1 3 5 3

4. Final Source Ranking

Low Low Low High*

* Special consideration due to significant contaminant sources

Source is considered High Susceptibility